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PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional)	
		2003UR021	
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	10/816,510	01 April 2004	
	First Named Inventor		
	Evelyn N. Drake et al.		
	Art Unit	Examiner	
	3663	Scott A. Hughes	
Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.			
This request is being filed with a notice of appeal.			
The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.			
I am the			
<input type="checkbox"/>	applicant/inventor.		
<input type="checkbox"/>	assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)		
<input checked="" type="checkbox"/>	attorney or agent of record. Registration number 40,775		
<input type="checkbox"/>	attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34		
		/J. Paul Plummer/ Signature	
		J. Paul Plummer Typed or printed name	
		713-431-7360 Telephone number	
		July 17, 2008 Date	
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.			



\*Total of 1 \_ forms are submitted.

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No. : 10/816,510 Confirmation No. : 8615  
Applicant : DRAKE, Evelyn N. et al.  
Filed : 01 April 2004  
TC/Art Unit : 3663  
Examiner : Scott A. Hughes  
Docket No. : 2003UR021  
Customer No. : 34477  
Titled : **Method for Improved Bubble Curtains for Seismic Multiple  
Suppression**

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**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

The applicants believe that the central issues in the present appeal involve one or more clear errors in fact made by the examiner. The discussion below falls in the category of a claim limitation not met by a reference.

All claims are drawn to a method for increasing the rise time of air bubbles emitted by a diffuser in water (to suppress noise in a marine seismic survey) by applying a chemical additive to the diffuser's surface. (Explanation from the specification: The bubble curtain lasts longer if the bubbles rise slowly.) The chemical additive can be either one that has wetting agent properties, or one that retards bubble coalescence, i.e.

where small bubbles combine to make a larger bubble. (More explanation: large bubbles rise faster than small bubbles.) In independent claim 52, the additive is painted on to the diffuser's surface with a brush; in independent claim 61, the additive is sprayed on; in independent claims 70, 79 and 83, the chemical additive is applied by dunking the diffuser in a container of additive.

All pending claims are rejected as obvious in view of the combination of three references: Behrens, Bernd, and Cosentino. A brief description of each follows.

Behrens discloses using air bubbles emitted by a diffuser (a *bubble curtain*) to suppress noise in a seismic survey. No use of chemical additives is disclosed or suggested. Bernd discloses a method for using bubbles naturally created in a ship's wake to confuse sonar detection of the ship by a submarine, featuring a way of prolonging the life of the bubbles by introducing into the water in the vicinity of the bubbles a chemical additive that will tend to prevent the bubbles from disappearing by dissolving into the water. Cosentino discloses a method of initially priming a blood oxygenator used in open heart surgery to more efficiently flush out extraneous gas by coating the oxygenator surfaces with a wetting agent that prevents the gas from clinging to the surfaces in small bubbles and interfering with the transfer of oxygen to the blood.

Selectively mining these three references, the examiner has found the following elements: (1) use of a bubble curtain to suppress noise in a marine seismic survey (Behrens); (2) identification of the technical problem of prolonging bubble curtain life (Bernd); (3) use of a chemical additive (not applied to a bubble diffuser surface) to prevent bubbles from dissolving in water (Bernd); and (4) applying a wetting agent to the surface of a device (not a bubble diffuser) to prevent existing bubbles from adhering to the device (Cosentino). But in addition to these, for the applicants' claimed invention to be obvious, the examiner at least needs to show that the prior art knows and appreciates all three of the following inventive steps essential to making the applicants' invention: (1) an important factor in bubble curtain duration is rise time of the bubbles; (2) smaller bubbles rise more slowly than larger bubbles; and (3) a wetting agent or bubble

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coalescence retardant applied to the bubble emitter surface will cause emitted bubbles to be smaller (wetting agent) or remain small (coalescence retardant). These three factors are the essence of the present invention. None of them are to be found in any of the three references.

More details and supporting information can be found in the "Response to Final Office Action" mailed by the applicants on 6/17/2008. The applicants respectfully request that the application be allowed on the existing claims.

Respectfully submitted,

Date: 17 July, 2008

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